

wherein uneven roughness is formed on a surface which is brought into contact with said material of at least one of said chip-mounting substrate and said printed circuit board,

wherein said uneven roughness exists on a bottom surface of said chip-mounting substrate, and

wherein said uneven roughness on said bottom surface increases an area of a contact surface between said chip-mounting substrate and the underfill material.

2.(Amended) A semiconductor device according to claim 1, wherein said uneven roughness is formed on at least one of said first conductive pads and said second conductive pads selectively.

3. (Amended) A semiconductor device according to claim 1, wherein said uneven roughness is shaped into at least one of a slit-like configuration and a dimple-like configuration.

4. (Amended) A semiconductor device, comprising:

a semiconductor chip;

a lead frame which is provided with said semiconductor chip mounted thereon and electrically connected with said semiconductor chip; and

a printed circuit board including third conductive pads which are formed thereon and brought into direct contact with said lead frame,

wherein at least one of said lead frame and said printed circuit board is provided with uneven rough contact surfaces in direct contact therebetween, and

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wherein said uneven roughness exists on a bottom surface of said lead frame.

18. (Amended) The semiconductor device according to claim 4, wherein said lead frame comprises a lead, said lead comprises an inner lead portion connected to an outer lead portion, said outer lead portion comprises said uneven roughness.

20. (Amended) A semiconductor device, comprising:

a semiconductor chip;
a chip-mounting substrate which is provided with said semiconductor chip mounted on a top surface thereof and first conductive pads formed on a bottom surface thereof and connected with said semiconductor chip electrically, said chip-mounting substrate including Cu wirings;

solder balls formed on said first conductive pads;

a printed circuit board on which second conductive pads connected with said solder balls are formed; and

material injected into a clearance formed between said chip-mounting substrate and said printed circuit board,

wherein uneven roughness is formed on a contact surface between said Cu wirings of said chip-mounting substrate and said solder balls, and

wherein said uneven roughness exists on a bottom surface of said Cu wirings, and said Cu wirings are connected to said solder balls to form a joined surface.